# STATE OF NORTH DAKOTA

# Information Technology Department

# 600 East Boulevard – Dept. 112

# Bismarck, ND 58505-0100

**Request For Proposals**
RFP 112-0405
**ADDENDUM #4**
Date of Issue: 13 May 2004

**Public Safety Mobile Radio Communications**:
State of North Dakota Information Technology Department is soliciting proposals for the replacement of the statewide public safety radio communications system with state-of-the-art equipment utilizing Project 25 standards.

***Bidders are not required to return this form***

Jerry Fossum, Director of Telecommunications
Information Technology Department
Procurement Officer

# ADDENDUM #4

## SECTION 4

### 4.02 Radio Communications Site Overview

Please confirm the specific tower site location coordinates identified in Exhibit 4-2 for Site 12 – Devils Lake, Site 16 – Fargo (West Fargo), Site 27 – Minot, Site 29 – New Salem, and Site 34 – Tioga. These site coordinates would seem to differ significantly and are not consistent with similar coordinate information in Exhibits 4-4 and 4-13.

**RESPONSE**

Site Location Coordinates
Site 12-Devils Lake lat.47-59-04 lon. 98-55-54
Site 16-West Fargo lat.46-52-29.9 lon. 96-56-19.3 and tower height of 400 feet.
Site 27- Minot lat 48-10-51 lon 101-18-56
Site 29-New Salem lat. 46-47-06 lon 101-24-30
Site 34-Tioga lat 48-18-16 lon 102-55-56

## SECTION 5

### 5.03 Location of Work

Infrastructure Work Locations – Please clarify the "dispatch control sites located throughout the State of North Dakota" requiring equipment installation work. Besides the Fraine Barracks control center in Bismarck, are all other dispatch control sites as identified in Exhibit 4-10?

**RESPONSE**

Besides the Fraine Barracks control center in Bismarck other control sites are the eight (8) Highway Patrol District Headquarter offices and seven (7) weigh inspection stations as identified in exhibit 4-8. Additionally the Department of Transportation has one control station located at the central radio shop in Bismarck.

### 5.13.1.2 Radio Site Antenna Equipment

The current base station antenna system is indicated to consist of 3 or 4 high-gain VHF antennas. What are the make and model of these antennas? Exhibit 4-16 provides a tower site antenna system configuration diagram. An additional updated diagram of Exhibit 4-16 has also been provided in Addendum #2.

Please confirm whether the updated diagram currently applies only to the Driscoll tower site, or whether it is the State's intent that this be the model for all upgraded tower sites?

**RESPONSE**
The make and model of the antennas is DB-224. The diagram provided for the Driscoll Tower site applies only to that site. The antenna system design is the responsibility of the bidder.

### 5.13.1.3 Inter-Site Interface Equipment

Fractional T1 technology is identified as one form of inter-site communications link service that the State is contemplating. In section 5.13.1.3, inter-site T1 links are also mentioned. Please clarify the fractional T1 terminology. This is understood to mean T1 service with a fraction of the full T1 capacity allocated to the site link.

**RESPONSE**
Fractional T-1 service consists of a T-1 line running at normal line rates but configured to only carry a fixed number of channels, typically a fraction of full capacity.

**From Addendum #2**

4.02 As a response to prior questions submitted, the State has provided further information regarding the current system antenna heights and output power levels for the purpose of developing a propagation model for the existing system.

In the table from the Exhibits provided, please confirm that the power level listed in Watts is at the input to the antenna connector as mounted on the tower, and therefore after antenna feedline loss and other duplexer/combiner insertion loss. As an example, a table entry of 250 W would indicate a transmitter output power of >350W prior to expected losses. Is this consistent with the existing station transmitter equipment?

Please make additions to this table to indicate the antenna type(s) / antenna gain(s) for the tower sites, and/or the Effective Radiated Power (ERP) of the tower sites if omni-directional antenna patterns are universally employed.

Please confirm the specific tower heights / antenna heights shown for Site 16 – Fargo, and Site 39 – Wishek. These heights differ significantly and are not consistent with height information shown in Exhibit 4-2 of the RFP.

**RESPONSE**
Power output is after the duplexer/filters and before any consideration for coaxial line loss. The antenna types are all DB-224 and the gain is 6dB.

Site 16 Fargo-400 ft. antenna heights A-420 ft.; B-420 ft.; C-380 ft.
Site 39 Wishek-200 ft. antenna heights A-220 ft.; B-195 ft.; C-155 ft.

**6.10.1.2 Page 87 / 6.10.1.3 Page 88**

"Round Trip" or "Worst Case" coverage maps are requested. Please clarify the intent. The concept of a "Round Trip" coverage map is not understood or described by TSB88-A (Wireless Communications Systems – Performance in Noise and Interference Limited Situations Recommended Methods for Technology-Independent Modeling, Simulation, and Verification) for methods of coverage prediction modeling. "Worst Case" coverage map is understood to mean the limiting coverage condition when comparing Talkout and Talkback.

**RESPONSE**
The intent of "Round Trip" or "Worst Case" coverage maps is to mean the limiting coverage when comparing Talkout and Talkback.

**QUESTION**
Is it possible to submit the coverage maps electronically and provide the main maps on hard copy and electronic?

**RESPONSE**
Submission of proposal information stands as stated in section 1.02.